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EXAMINER	
LE, LANA N	
ART UNIT	PAPER NUMBER
2685	17

DATE MAILED: 10/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary	Application No.	Applicant(s)
	09/400,974	SATO ET AL.
	Examiner	Art Unit
	Lana Le	2685

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 July 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) _____ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-40 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The term "millimeter band" in claims 1-40 is a relative term which renders the claim indefinite. The term "millimeter band" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The specification does not provide enough support for the millimeter band signal.

3. Claims 1-40 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The simultaneous reception of the two signals is not clearly defined on how the signals are received simultaneously.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-11, 14-23, 28-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fortune et al (US 5,450,615) in view of Hayashikura et al (US 5,654,715).

Regarding claim 1, Fortune et al discloses a signal transmitting/receiving system (fig. 2 and hereafter), comprising:

a stationary transmitter positioned at 210 transmitting a signal wave (fig. 2);

a propagation path forming portion forming at least one indirect propagation path 219 from 210 towards floor 216 and to the receiver 212 for propagation of the RF band signal wave;

a stationary receiver at 212 including a receive antenna 215 capable of receiving simultaneously a plurality of the signal waves from a plurality of propagation paths including a line of sight propagation path 217 and the at least one indirect propagation path 219, and receiving the signal wave from at least one of the plurality of propagation paths (col 5, lines 43 – col 6, line 67).

Fortune et al didn't specifically disclose a millimeter band signal transmitting/ receiving system, and a millimeter band propagation signal, transmitting and receiving a millimeter band signal wave and receive antenna having a main lobe and a side lobe. Hayashikura et al discloses a millimeter band signal transmitting/receiving system, and a millimeter band propagation signal transmitting and receiving a millimeter band signal wave (col 2, lines 7-18; col 3, lines 60-67). It would have been obvious to one of ordinary skill in the art at the time the invention was made to comprise the indoor, in-building high frequency band signal of Fortune et al with the millimeter band signal in order to fully utilize the continuous spectrum by broadening the intended use of the signal wave for commercial purposes merely by using an alternative frequency in a higher frequency band than usual depending on the available spectrum resource of the system. Also, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have an antenna's main lobe and side lobe in Fortune's receiving antenna, which is intended to receive the direct and indirect paths and to ensure antenna gains as stated in the specification page 9, lines 5-9 and page 12, lines 19-24 as disclosed by Fortune's calculated reflection path losses and direct path losses being scaled based on the antenna power gain in the direction of propagation (col 6, lines 52-56) in order to receive the maximum radiation achievable by taking into account a lossy environment in which multipath occurs which reduce the antenna's radiation intensity.

Regarding claim 2, Fortune et al and Hayashikura et al discloses the millimeter band signal transmitting/receiving system according to claim 1, wherein Fortune et al

further discloses the propagation path forming portion includes a reflector 216 arranged to reflect the signal wave transmitted from the transmitter and direct the reflected signal wave to the receiver 212 (fig. 2).

Regarding claim 3, Fortune et al and Hayashikura et al discloses the millimeter band signal transmitting /receiving system according to claim 2, wherein Fortune et al further discloses the reflector 216 is arranged substantially almost in parallel to a line of sight 217 between the transmitter and the receiver (fig 2).

Regarding claim 4, Fortune et al and Hayashikura et al discloses the millimeter band signal transmitting/receiving system according to claim 2, wherein Fortune et al further discloses the reflector has thin film including aluminum (col 1, lines 41; col 4, line 38).

Regarding claim 5, Fortune et al and Hayashikura et al discloses the millimeter band signal transmitting/receiving system according to claim 2, wherein Fortune et al further discloses the reflector has a surface covered by an insulating material (col 1, line 41; col 4, line 38-39).

Regarding claim 6, Fortune et al and Hayashikura et al discloses the millimeter band signal transmitting/receiving system according to claim 2, wherein Fortune et al further discloses the reflector has a surface covered by a transparent insulating material (col 1, line 41; col 4, lines 38-39).

Regarding claim 7, Fortune et al and Hayashikura et al discloses the millimeter band signal transmitting/receiving system according to claim 2, wherein Fortune et al further disclose a plurality of the reflectors (col 5, lines 3-5; col 3, lines 33-35) are

arranged to form the plurality of propagation paths for propagating the signal waves to the receiver.

Regarding claim 8, Fortune et al and Hayashikura et al discloses the millimeter band signal transmitting/receiving system according to claim 1, wherein Fortune et al further discloses the receiver always simultaneously receives the plurality of signal waves from the plurality of propagation paths in a normal state (col 3, lines 52-56; fig. 2; col 6, lines 49-52).

Regarding claim 9, Fortune et al and Hayashikura et al discloses the millimeter band signal transmitting/receiving system according to claim 1, wherein Fortune et al further discloses the receiver and the transmitter are provided inside a house 102, the propagation path includes a structural component 216 defining an internal space of the house 102 and reflecting a signal wave transmitted from the transmitter at 210, and the transmitter is spaced by a prescribed distance from the structural component defining the internal space of the house for transmitting the signal wave with the at a prescribed transmission angle (fig. 2; col 6, lines 6-52).

Regarding claim 10, Fortune et al and Hayashikura et al further disclose the millimeter band signal transmitting/receiving system according to claim 9, wherein Fortune et al further discloses each of the prescribed distance and the prescribed transmission angle is determined depending on a region for propagation of the plurality of signal waves and a positional relationship between the transmitter and the receiver (col 6, line 63-66; col 7, line 8-40).

Regarding claim 11, Fortune et al discloses a signal transmitting/receiving system, comprising a plurality of stationary transmitters (col 6, lines 63-67) which is set up at the transmitter point 210 and a stationary receiver at 212 including a receive antenna 215 (col 5, lines 1-2) at receiver point 212 arranged to simultaneously receive a plurality of signal waves output from the plurality of transmitters (col 6, lines 48-53), the plurality of signal waves transmitted from the plurality of transmitters having a same frequency due to the same path length from the transmitter point 210 (col 6, lines 63-67; col 5, lines 45-53). Fortune et al didn't specifically disclose a millimeter band signal transmitting/receiving system transmitting and receiving a plurality of millimeter band signal waves, and the receive antenna having a main lobe and a side lobe. Hayashikura et al discloses a millimeter band signal transmitting/receiving system transmitting and receiving a plurality of millimeter band signal waves (col 2, lines 7-18; col 3, lines 60-67). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include in the indoor high frequency band of Fortune et al the millimeter band of Hayashikura et al in order to obtain microwave and above frequencies in the same continuous wireless radio frequency spectrum for more practical applications, i.e. local multipoint distribution services in the indoor environment of Fortune et al, which serves as intended commercial use purposes. Also, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have an antenna's main lobe and side lobe in Fortune's receiving antenna, which is merely intended to receive the direct and indirect paths and to ensure antenna gains as stated in the specification page 9, lines 5-9 and page 12, lines 19-24 as disclosed by

Fortune's calculated reflection path losses and direct path losses being scaled based on the antenna power gain in the direction of interest (col 6, lines 52-56) in order to receive the maximum radiation achievable by taking into account a lossy environment in which multipath occurs which reduce the antenna's radiation intensity.

Regarding claim 14, Fortune et al and Hayashikura et al discloses the millimeter band signal transmitting/receiving system according to claim 11, wherein Fortune et al further discloses the receiver 212 always simultaneously receives the plurality of signal waves in a normal state (col 6, lines 49-52).

Regarding claim 15, Fortune et al discloses a house 102 (fig. 2) provided with a signal transmitting/receiving system, comprising a structural component 216 defining an internal space and a indoor signal transmitting/receiving system,

wherein the signal transmitting/receiving system includes a stationary transmitter located at 210 transmitting a signal wave; a propagation path forming portion arranged in the structural component for forming at least one indirect propagation path for propagation of the signal wave (col 6, lines 6-7);

a stationary receiver at 212 (fig. 2) simultaneously receiving a plurality of signal waves through a plurality of propagation paths including a line of sight propagation path 217 to and the at least indirect one propagation path 219 (col 5, line 43 – col 6, line 56).

Fortune et al didn't specifically disclose a millimeter band signal transmitting/receiving system, and a transmitter and receiver for transmitting and receiving a millimeter band signal wave and the receive antenna having a main lobe and a side lobe. Hayashikura et al discloses a millimeter band signal

transmitting/receiving system, and a transmitter and receiver for transmitting and receiving a millimeter band signal wave (col 2, lines 7-18; col 3, lines 60-67). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include in the indoor radio frequency propagation signal of Fortune et al the high frequency millimeter band signal in order to fully utilize the continuous radio frequency spectrum to include higher microwave frequencies that has more industrial applicability to practical commercial purposes with the advantage of small output power and measuring of signals for reflective and radiation loss as in Fortune et al (col 6, lines 21-56). Also, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have an antenna's main lobe and side lobe in Fortune's receiving antenna, which is intended to receive the direct and indirect paths and to ensure antenna gains as stated in the specification page 9, lines 5-9 and page 12, lines 19-24 as disclosed by Fortune's calculated reflection path losses and direct path losses being scaled based on the antenna power gain in the direction of propagation (col 6, lines 52-56) in order to receive the maximum radiation achievable by taking into account a lossy environment in which multipath occurs which reduce the antenna's radiation intensity.

Regarding claim 16, Fortune et al and Hayashikura et al discloses a house provided with a millimeter band signal transmitting/receiving system according to claim 15, wherein the propagation path forming portion has a reflector 216 reflecting an output from the transmitter and the reflector is arranged on a surface of the component (fig. 2; col 5, lines 3-35).

Regarding claim 17, Fortune et al and Hayashikura et al disclose a house provided with a millimeter band signal transmitting/receiving system according to claim 15, wherein Fortune et al further discloses the propagation path forming portion has a reflector 216 reflecting an output from the transmitter at transmitter point 210 and the reflector is arranged inside the component (col 5, lines 19-21).

Regarding claim 18, Fortune et al discloses a radio frequency signal transmitting/receiving system, comprising:

at least one stationary transmitter at 210 transmitting an indoor signal through an associated transmit antenna 211 (col 4, line 60-68) along a plurality of propagation paths 217, 219 of the signal formed by the associated transmit antenna including a line of sight propagation path between the associated transmit antenna and a receive antenna 215 (col 6, lines 47-52); a receiver at 212 receiving the signal through the receive antenna (col 5, line 1-2);

wherein, in a normal state when the line of sight propagation path 217 is unobstructed when it does not pass through a surface (col 5, lines 43-48), the receiver receives the signal through each of the plurality of propagation paths including the line of sight propagation path (col 6, lines 62-63; fig. 2).

wherein, in an obstructed state when the line of sight propagation path is obstructed, the receiver receives the signal through each of the plurality of propagation paths except the line of sight propagation path (col 5, lines 57 – col 6, line 7).

Fortune et al didn't specifically disclose a millimeter band transmitting/receiving system; the transmitter transmitting a millimeter band signal; and the receiver receiving

a millimeter signal and the receive antenna having a main lobe and a side lobe. Hayashikura et al discloses a millimeter band transmitting/receiving system; a transmitter transmitting a millimeter band signal; and a receiver receiving a reflected millimeter signal (col 3, lines 55-67; col 2, lines 7-18). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include in the indoor radio frequency propagation signal of Fortune et al the high frequency millimeter band signal in order to fully utilize the continuous radio frequency spectrum to include higher microwave frequencies that has more industrial applicability to practical commercial purposes with the advantage of small output power and measuring of signals for reflective and radiation loss as in Fortune et al (col 6, lines 21-56). Also, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have an antenna's main lobe and side lobe in Fortune's receiving antenna, which is intended to receive the direct and indirect paths and to ensure antenna gains as stated in the specification page 9, lines 5-9 and page 12, lines 19-24 as disclosed by Fortune's calculated reflection path losses and direct path losses being scaled based on the antenna power gain in the direction of propagation (col 6, lines 52-56) in order to receive the maximum radiation achievable by taking into account a lossy environment in which multipath occurs which reduce the antenna's radiation intensity.

Regarding claim 19, Fortune et al and Hayashikura et al disclose the millimeter band signal transmitting/ receiving system of claim 18, wherein at least a portion of the plurality of propagation paths are formed by at least one reflector 216 (fig. 2).

Regarding claim 20, Fortune et al and Hayashikura et al disclose the millimeter band signal transmitting/ receiving system of claim 19, wherein Fortune et al further discloses the at least one reflector 216 has a surface arranged substantially parallel to the direct path 217 (fig. 2).

Regarding claim 21, Fortune et al and Hayashikura et al disclose the millimeter band signal transmitting/ receiving system of claim 19, wherein Fortune et al further discloses the at least one reflector includes two reflectors (col 6, lines 8-11).

Regarding claim 22, Fortune et al and Hayashikura et al disclose the millimeter band signal transmitting/ receiving system of claim 21, wherein Fortune et al further discloses at least one of the plurality of propagation paths of the signal is formed by reflection from each of the two reflectors (col 6, lines 8-11).

Regarding claim 23, Fortune et al and Hayashikura et al disclose the millimeter band signal transmitting/ receiving system of claim 18, wherein Fortune et al further discloses the at least one transmitter is a single transmitter (col 6, line 67-68).

Regarding claim 28, Fortune et al and Hayashikura et al disclose the millimeter band signal transmitting/ receiving system of claim 18, wherein they didn't further specifically disclose the line of sight propagation path between the associated transmit antenna and the receive antenna is formed in a side lobe of the associated transmit antenna. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have an antenna's side lobe in Fortune's receiving antenna, which is intended to receive one of multipath signals and to ensure antenna gains as stated in the specification page 9, lines 5-9 and page 12, lines 19-24 as

disclosed by Fortune's calculated total direct path losses being scaled based on the antenna power gain in the direction of interest (col 6, lines 52-56) in order to receive the maximum radiation achievable by taking into account a lossy environment herein only direct path losses is considered which might not reduce an antenna's radiation intensity.

Regarding claim 29, Fortune et al and Hayashikura et al discloses the millimeter band signal transmitting/receiving system of claim 18, wherein they didn't further disclose the plurality of propagation paths of the signal except the line of sight propagation path are formed in a main lobe of the associated transmit antenna. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have an antenna's main lobe in Fortune's receiving antenna, which is intended to receive one of multipath signals and to ensure antenna gains as stated in the specification page 9, lines 5-9 and page 12, lines 19-24 as disclosed by Fortune's calculated total reflection path losses being scaled based on the antenna power gain in the direction of interest (col 6, lines 52-56) in order to receive the maximum radiation achievable by taking into account a lossy environment in which reflection occurs which reduces the antenna's radiation intensity.

Regarding claim 30, Fortune et al and Hayashikura et al disclose the millimeter band signal transmitting/ receiving system of claim 18, wherein Fortune et al further discloses a portion of the plurality of propagation paths are formed by interaction with a structural component 216 of a building 102 (fig. 2).

Regarding claim 31, Fortune et al and Hayashikura et al disclose the millimeter band signal transmitting/receiving system of claim 18, wherein Fortune et al further discloses the receive antenna is a single receive antenna 215.

Regarding claim 32, Fortune et al and Hayashikura et al disclose the millimeter band signal transmitting/receiving system of claim 18, wherein Fortune et al further discloses the receiver simultaneously receives the signal through each of an unobstructed direct plurality of propagation paths 217 (col 5, lines 46-47).

Regarding claim 33, Fortune et al and Hayashikura et al discloses the millimeter band signal transmitting/ receiving system of claim 1, wherein Fortune et al further discloses the receiver 212 receives the signal wave through the line of sight propagation path 217 when the line of sight propagation path is not blocked when it does not pass through a surface (col 5, lines 45-48).

Regarding claim 34, Fortune et al and Hayashikura et al disclose the millimeter band signal transmitting/receiving system of claim 1, wherein al Fortune et al further discloses the receiver receives the signal wave only through the at least one indirect path when the line of sight propagation path is blocked (col 5, lines 64 – col 6, line 7).

Regarding claim 35, Fortune et al and Hayashikura et al discloses the millimeter band signal transmitting/ receiving system of claim 11, wherein Fortune et al further discloses the receiver 212 receives one of the plurality of signal waves through at least one line of sight propagation path 217 between at least one of the plurality of transmitters and the receiver (col 6, lines 39-67; fig. 2).

Regarding claim 36, Fortune et al and Hayashikura et al disclose the house provided with a millimeter band signal transmitting/receiving system of claim 15, wherein Fortune et al further discloses the receiver at receiver point 212 receives one of the plurality of signal waves through the line of sight 217 propagation path when the line of sight propagation path is not blocked (col 5, lines 62-63).

Regarding claim 37, Fortune et al and Hayashikura et al further disclose the millimeter band signal transmitting/ receiving system of claim 15, wherein Fortune et al further discloses the receiver only receives the plurality of signal waves through the at least one indirect propagation path from when the line of sight propagation path is blocked (col 5, lines 64-65; col 6, lines 6-7).

Regarding claim 38, Fortune et al and Hayashikura et al discloses the millimeter band signal transmitting/ receiving system of claim 1, wherein they didn't specifically disclose the at least one indirect propagation path is formed in a main lobe of a transmit antenna. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have an antenna's main lobe in Fortune's receiving antenna, which is intended to receive one of multipath signals and to ensure antenna gains as stated in the specification page 9, lines 5-9 and page 12, lines 19-24 as disclosed by Fortune's calculated total reflection path losses being scaled based on the antenna power gain in the direction of interest (col 6, lines 52-56) in order to receive the maximum radiation achievable by taking into account a lossy environment in which reflection occurs which reduces the antenna's radiation intensity.

Regarding claim 39, Fortune et al and Hayashikura et al discloses the millimeter band signal transmitting/ receiving system of claim 1, wherein they didn't further discloses the line of sight propagation path is formed in a side lobe of a transmit antenna. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have an antenna's side lobe in Fortune's receiving antenna, which is intended to receive one of multipath signals and to ensure antenna gains as stated in the specification page 9, lines 5-9 and page 12, lines 19-24 as disclosed by Fortune's calculated total direct path losses being scaled based on the antenna power gain in the direction of interest (col 6, lines 52-56) in order to receive the maximum radiation achievable by taking into account a lossy environment herein only direct path losses is considered which might not reduce an antenna's radiation intensity.

Regarding claim 40, Fortune et al and Hayashikura et al disclose the millimeter band signal transmitting/ receiving system of claim 15, wherein they didn't further discloses the line of sight propagation path is formed in a side lobe of a transmit antenna. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have an antenna's side lobe in Fortune's receiving antenna, which is intended to receive one of multipath signals and to ensure antenna gains as stated in the specification page 9, lines 5-9 and page 12, lines 19-24 as disclosed by Fortune's calculated total direct path losses being scaled based on the antenna power gain in the direction of interest (col 6, lines 52-56) in order to receive the maximum radiation achievable by taking into account a lossy environment herein only direct path losses is considered which might not reduce an antenna's radiation intensity.

5. Claims 12-13, 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fortune et al (US 5,450,615) in view of Hayashikura et al (5,654,715) and further in view of Kagami et al (US 5,479,443).

Regarding claim 12, Fortune et al and Hayashikura et al discloses the millimeter band signal transmitting/receiving system according to claim 11, wherein they didn't further disclose wherein each of the plurality of transmitters includes a local oscillator oscillating at a prescribed local oscillator frequency for generating the signal wave at the same frequency. Kagami further discloses wherein each of the plurality of transmitters includes a local oscillator oscillating at a prescribed local oscillator frequency for generating the signal wave at the same frequency (col 9, lines 25-36). It would have been obvious to one of ordinary skill in the art at the time the invention was made for two transmitters to have a common frequency via a common local oscillator in order to convert the reference frequency to the desired frequency band signal.

Regarding claim 13, Fortune et al, Hayashikura et al, and Kagami et al disclose the millimeter band signal transmitting/receiving system according to claim 12, wherein Kagami further discloses the local oscillators are in synchronization with each other.

Regarding claim 24, Fortune et al and Hayashikura et al disclose the millimeter band signal transmitting/ receiving system of claim 18, Fortune et al and Hayashikura et al didn't further disclose wherein the at least one transmitter includes two transmitters and two associated transmit antennas, wherein each of the two associated transmit antennas provides a separate line of sight propagation path to the receive antenna.

Kagami et al further discloses wherein the at least one transmitter includes two transmitters and two associated transmit antennas, wherein each of the two associated transmit antennas provides a separate line of sight propagation path to the receive antenna (col 9, lines 37-48). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the one transmitter includes two transmitters in order to assure that the signal can be transmitted via diversity transmission.

Regarding claim 25, Fortune et al, Hayashikura et al, and Kagami et al disclose the millimeter band signal transmitting/receiving system of claim 24, wherein Kagami further discloses the two transmitters are further synchronized with each other (col 9, lines 37-48).

Regarding claim 26, Fortune et al, Hayashikura et al, and Kagami et al disclose the millimeter band signal transmitting/ receiving system of claim 25, wherein Kagami et al further discloses the two transmitters share a common local oscillator (col 9, lines 37-48).

6. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fortune et al in view of Hayashikura et al (US 5,654,715) as applied to claim 18 above, and further in view of Evans et al (US 5,920,813).

Regarding claim 27, Fortune et al and Hayashikura et al discloses the millimeter band signal transmitting/ receiving system of claim 18, wherein they didn't further disclose the signal is a video signal. Evans et al further discloses the signal is a video signal (col 4, lines 65- col 5, line 2; col 8, lines 13-20). It would have been obvious to

one of ordinary skill in the art at the time the invention was made to add the video signals in order to apply the higher microwave frequencies to practical use.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lana Le whose telephone number is (703) 308-5836. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on (703) 305-4385. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4750.

Lana Le

October 5, 2003

EDWARD F. URBAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600